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Abstract of the Disclosure

0047 A method for forming aluminum bumps by first sputter aluminum and then chemical mechanical polishing to remove excess aluminum is disclosed. In the method, a pre-processed electronic substrate which has a plurality of I/O pads formed on top is first provided. An insulating material layer such as SiO_2 , Si_3N_4 , SOG or polyimide is then deposited on the pads to a thickness that is essentially the thickness of the aluminum bumps to be formed. A plurality of openings with one on each of the plurality of I/O pads is then photolithographically formed, followed by a sputtering deposition to fill the plurality of openings with a metal that includes aluminum. A chemical mechanical polishing technique is then used to remove the excess aluminum so that a top surface of the aluminum bump is flush with the top surface of the insulating material layer, followed by the final step of removing at least partially a thickness of the insulating material layer by a wet etch process.